

REMARKS

Applicants respectfully traverse and request reconsideration.

Applicants wish to thank the Examiner for notice that Claims 3, 6, 10, 12, 13, and 15-18 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Various informalities have been corrected in Figures 1 and 2 and within the Specification. Figure 1 has been amended to include the following labels: "Audio outputs" and "Video data signals." Similarly, Figure 2 has been amended such that each instance of the box labeled "crowd" additionally reflects the assigned numerical label, 110, in accordance with the Specification.

The Drawings stand objected to under 37 CFR § 1.83(a). Contrary to the Examiner's statement asserting that the Drawings do not depict a tuner, Applicants respectfully note that the Specification teaches that the video capture module (Fig. 1, Element 12) may be a tuner capable of receiving video inputs and processing them to produce digitized video data. (Page 3, Last Line - Page 4, First Two Lines). As a result, the Drawings do show every feature of the invention specified in the claims. Applicants respectfully request the objection to the Drawings to be withdrawn.

The Drawings also stand objected to under 37 CFR § 1.83(a) because they fail to show MPEG2 Decoder 60 as described in the Specification. Applicants respectfully assert that the amended Specification properly indicates that "a digital video retrieval module 22 contain[s] an MPEG2 Decoder." (Page 3, Last Two Lines). Support for this amendment can be found in the first full paragraph of page 6 in the Specification: "the digital video retrieval module 22 may utilize an MPEG2 decoding scheme such that the encoded video is stored in an MPEG2 format

and is decoded into an uncompressed video component.” Applicants respectfully request the objection to the Drawings to be withdrawn.

Claims 1, 2, 4, 5, 7-9, 11 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,923,365 (Tamir et al.). Tamir is directed at a sports event video manipulating system for manipulating a representation for a sports event. Tailored to the analysis of video clips captured during sport games, the system is capable of, inter alia, indexing video segments, on-line graphical blending and audio dubbing, editing and storing indexed video segments, spotting key-words on the original audio channel of the video input, automatic tracking and highlighting of objects, and creation of a wide field of view background image of the playing fields. (Col. 7, Line 28 – Col. 8, Line 16). In contrast to Applicants’ claimed invention, Tamir does not disclose or make obvious a method or system related to automatic panning of digital content while zoomed.

With respect to Claim 1, Tamir fails to make obvious the beginning of a zoom mode as defined by Applicants’ Specification. “Zooming allows a person watching television to magnify *a selected portion of the television screen*. The selected portion is a “zoom frame.” The television displays the zoom frame, magnifying it to cover the entire screen, rather than the entire MPEG2 frames (i.e., the “full frames”) as received by the television.” (Page 2, First Paragraph; Emphasis Added). Examiner’s citation to a tracking procedure that takes into account a change in magnification (zoom in and out) is wholly different from Applicants’ claimed invention. Tamir explains that the tracking technique is used to track a selected object throughout a succession of frames using a dynamical search window centered around the object location in the previous frame and performing the edge detection procedure inside this window. (Col. 9, Lines 52 – 60).

Additionally, Tamir teaches that the tracking procedure takes into account that there may be a change in magnification and of objects' poses through the succession of frames. (Col. 10, Lines 10-13). Tamir teaches a system that can track an object when a *cameraperson* changes the magnification of a recorded image. (Emphasis Added.) A user of Tamir's system is unable to control the zoom percentage of any portion of the digital video.

Because Tamir is directed at a system that is unable to allow a user to zoom in upon a portion of an image, Applicants respectfully request a showing as to a reference that would make obvious the use of a zoom mode in connection with the editing system disclosed by Tamir. Furthermore, the remainder of Applicants' Claim 1 is not made obvious by the Tamir reference. The claimed method of identifying a first portion of an image is not met by step 100 of Figure 3A. Step 100 references the process in which the video encoder 20 *grabs and digitizes the first video frame*. (Col. 8, Lines 53-55; Emphasis Added). In contrast to grabbing an entire video frame, Applicants' claimed invention is in reference to the identification of a first *portion of an image*. (Emphasis Added). As taught by the Applicants' claimed invention, the identification of a first portion of an image corresponds to a zoom portion selected by the user that indicates the portion of an image/video that the user wishes to magnify. (Page 9, last three paragraphs). Tamir fails to disclose the identification of a first portion of an image in connection to a selected zoom mode. As a result, Tamir fails to make obvious the remaining elements of Claim 1, namely the selection and display of a second portion of the image when motion is detected of an object within the first portion of the image. Tamir does not make obvious any portion of Applicants' Claim 1.

Applicants respectfully believe that Claim 1 is in proper condition for allowance. Claim 5 corresponds to the television system claim of Claim 1 and is also believed to be in proper

condition for allowance. Additionally, Claim 8 is believed to be in proper condition for allowance because of its similarities to Claim 1; Claim 8 contains the steps of, inter alia, beginning a zoom mode and identifying a first portion of an image.

With regard to Claim 2, Applicants respectfully repeat the relevant remarks made with respect to Claim 1. Specifically, Applicants note that Tamir fails to make obvious any use of a zoom mode or the identification of a first or second portion of an image. Therefore, Tamir also fails to teach any subsequent limitation upon Claim 1. Specifically Tamir does not anticipate the step of terminating the zoom mode when at least one edge of the second portion of the image extends beyond the image.

Claim 2 can be understood with respect to the fourth picture of Figure 2. When at least one edge of the second portion of the image extends beyond the image, the zoom mode is terminated. Examiner's citation to step 170 of Figure 3B does not teach this limitation. Figures 3A and 3B show a flowchart for the process of highlighting an object in a sequence of a video representation of an event. Step 170 pertains to the detection of objects that have entered or exited the camera's field of view. The system executes a disappearance analysis to monitor objects that have left the field of view and a reentry analysis to identify objects that have reentered the scene/camera field of view. (Col. 10, Lines 35-45). For example, a player in a sporting event may move outside of the camera's field of view. When this event occurs, a disappearance analysis is executed to monitor this change. Step 170 does not teach the limitation in which a *zoom mode is canceled* when an edge of the second portion of the image extends beyond the image. (Emphasis Added). Tamir does not distinguish between a portion of the image and the entire image whereby the portion of the image represents a magnified portion of

the image as defined by a user's zoom parameters. Moreover, Applicants' claimed invention does not relate to the technique of highlighting as taught by Tamir.

Applicants respectfully believe Claim 2 is in proper condition for allowance. Claim 9, dependent upon Claim 8, contains the same language as Claim 2 and is therefore also believed to be in proper condition for allowance.

With respect to Claim 4, Applicants respectfully repeat the relevant remarks made with respect to Claim 1. Because Tamir does not anticipate the identifying of a first or second *portion* of an image and is only concerned with the entire camera field of view, Applicants maintain that Tamir cannot make obvious any subsequent limitation describing the type of image corresponding to a selected portion. (Emphasis Added). Furthermore, Tamir is silent as to the use of detecting motion of an object within the portion of the image by use of examining MPEG2 motion vectors. Applicants respectfully request a showing including the column and line number within Tamir that teaches this limitation.

Applicants respectfully believe Claim 4 is in proper condition for allowance. Claim 11 corresponds to the same limitation upon independent Claim 8 and is therefore also believed to be in proper condition for allowance. Furthermore, Applicants take notice that Claim 16 corresponds to the system claim of Claim 4 and was not rejected. For the foregoing reasons, Applicants maintain that Claim 16 is also in proper condition for allowance.


Applicants respectfully note that Claim 7, dependent upon allowable Claim 5, contains additional patentable subject matter and is in proper condition for allowance.

Attached hereto is a marked up version of the changes made to the Specification by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

Applicants respectfully request that the foregoing amendments to the specification be admitted and that the pending claims be allowed to issue. Should the Examiner wish to discuss any aspect of the application, he is invited to contact the undersigned at his convenience directly at (312) 609-7599.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please replace the last paragraph beginning on page 3 and continuing onto page 4 with the following rewritten paragraph:

Various aspects of the present invention may be more fully understood with reference to FIGS. 1-3. FIG. 1 shows a digital television system that includes a video capture module 12, an MPEG2 video encoder 14, digital audio/video storage 20, a digital video retrieval module 22 containing an MPEG2 Decoder[60], a zoom module 70, and a display 88. The video capture module 12 is, for example, a tuner that receives video inputs 34 and processes them to produce digitized video data 36. [The video]Another capture module[12] captures audio inputs[44]40 and processes them to produce digitized audio data[46]42. For example, the video capture module 12 processes video inputs from NTSC broadcasts, VCR outputs, etc. and converting them into digitized video data 36. The audio capture module 16, which produces digitized audio data 42 therefrom, receives an audio input 40. The video inputs 34 and audio inputs[44]40 are part of a program input that may be originated from a television broadcast, cable broadcast, satellite broadcast, VCR output, DVD output, or any audio/video analog signal.

Please replace the first full paragraph beginning on page 5 with the following rewritten paragraph:

In a third embodiment, the digital audio/video storage 20 is implemented in parallel with the Zoom module 70, and both the digital audio/video storage 20 and the Zoom module 70 receive the MPEG encoded audio data 44 and the MPEG encoded video data 38[may be provided directly to the Zoom module 70]. When included, the digital audio/video storage 20 may be a portion of a file management system that stores the MPEG encoded audio data 44 and

the MPEG encoded video data 38 in a storage medium or other an archiving module. The storage medium may be a hard drive of a personal computer, RAM of a personal computer, floppy disk, or any particular digital storage medium.

Please replace the last paragraph beginning on page 12 and continuing onto page 13 with the following rewritten paragraph:

FIG. 3 shows a method in accordance with one embodiment of the present invention. The method begins at step 116, when the zoom module 70 determines to begin a zoom mode. The zoom mode may be entered automatically, or in response to user input. At step 120, the zoom module 70 determines a zoom portion of the full image. The zoom portion may be defined by three components: a horizontal position within the full frame, a vertical position within the full frame, and a size percentage (zoom factor) with respect to the full frame. For example, the position may be a distance from the left edge of the full frame and a distance from the top edge of the full frame. Alternatively, the zoom portion may be defined by a horizontal position and vertical position of a corner of the zoom frame within the full frame, and a horizontal position and vertical position of an opposite corner of the zoom frame within the full frame.

At step 130, the zoom module displays the selected portion (i.e., the zoom portion) on the display. At step 140, the zoom module detects motion of an object within the portion of the image. For example, the zoom module detects the compensated motion vector associated with the automobile 104 within the zoom frame. This optionally includes subtraction of a motion vector associated with the background. At step 150, the zoom module selects a second portion of the image. It will be recalled that a video image is actually a sequence of still frames presented rapidly so as to create an appearance of motion. Accordingly, the second portion of the image is simply a next zoom frame in a sequence. The second portion may have the same size and

location with respect to the full frame as the first zoom frame, or may be adjusted with respect to the first zoom frame. [If the]The second portion[is] may be adjusted continuously in response to the compensated motion vector of an object within the first zoom frame. If desired, the adjustments can be accumulated and delayed until the object nears an edge of the second portion of the image.

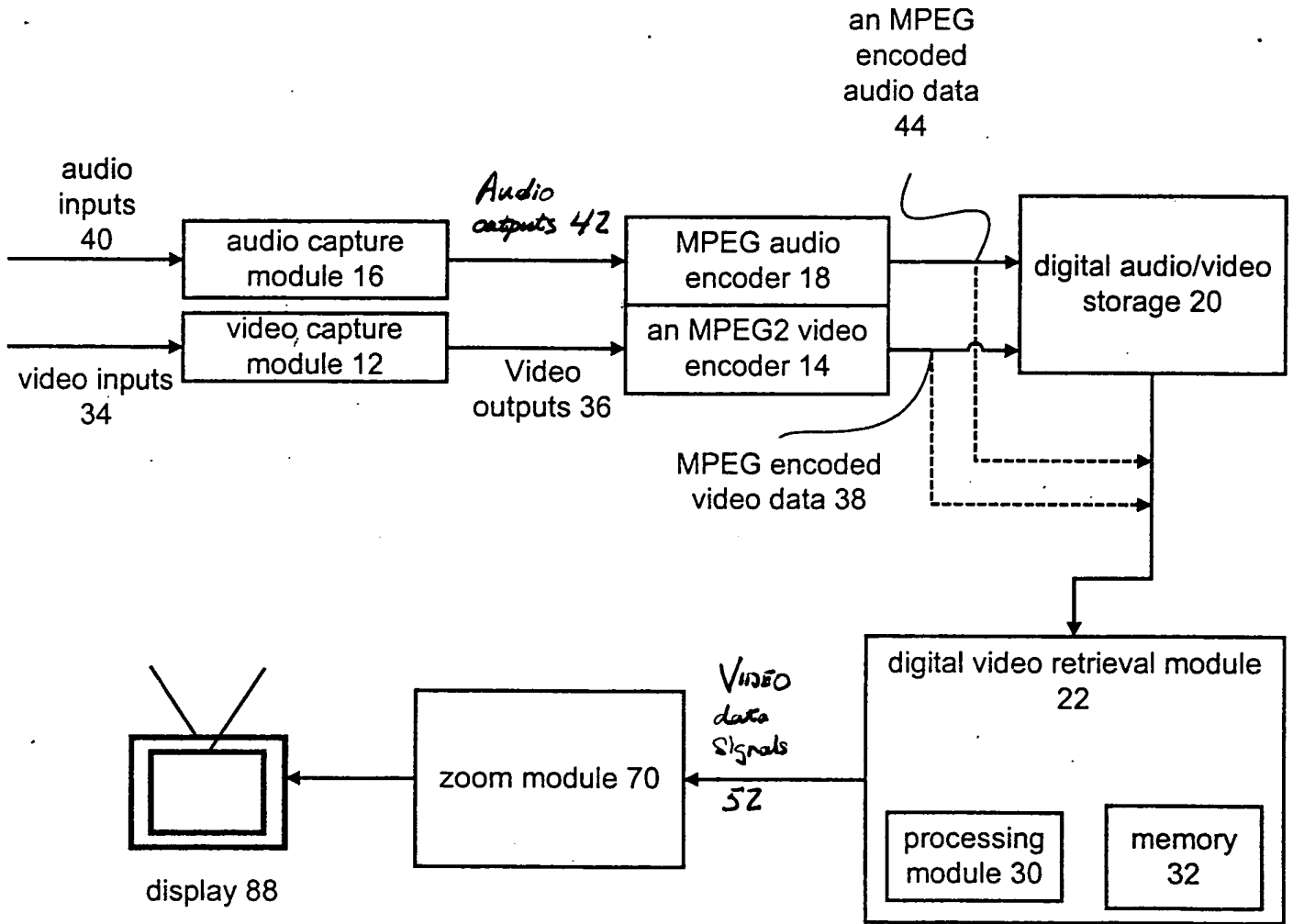
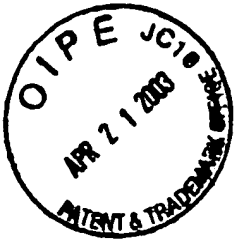


FIG. 1

**Digital Video
Recorder 10**

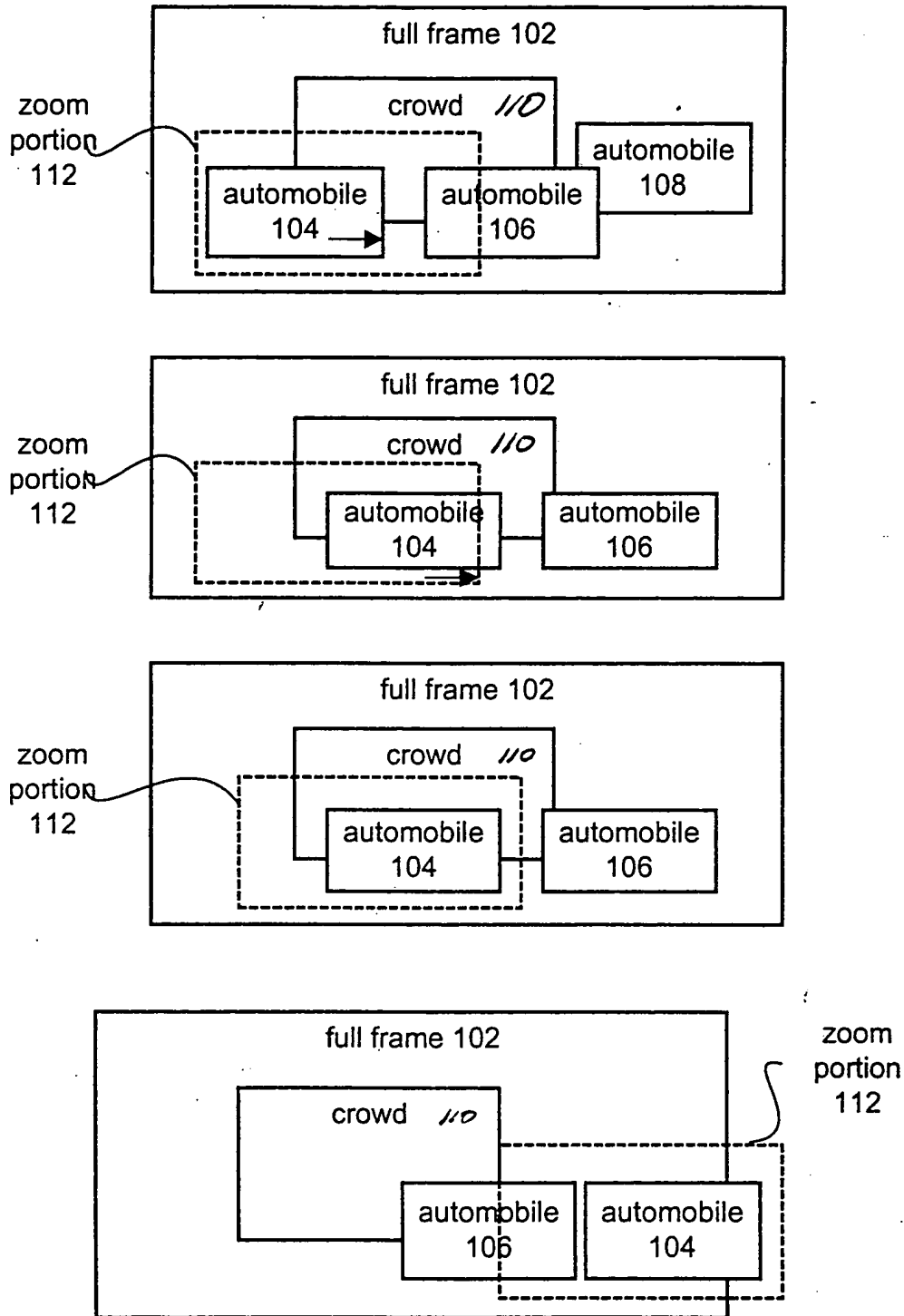


FIG. 2

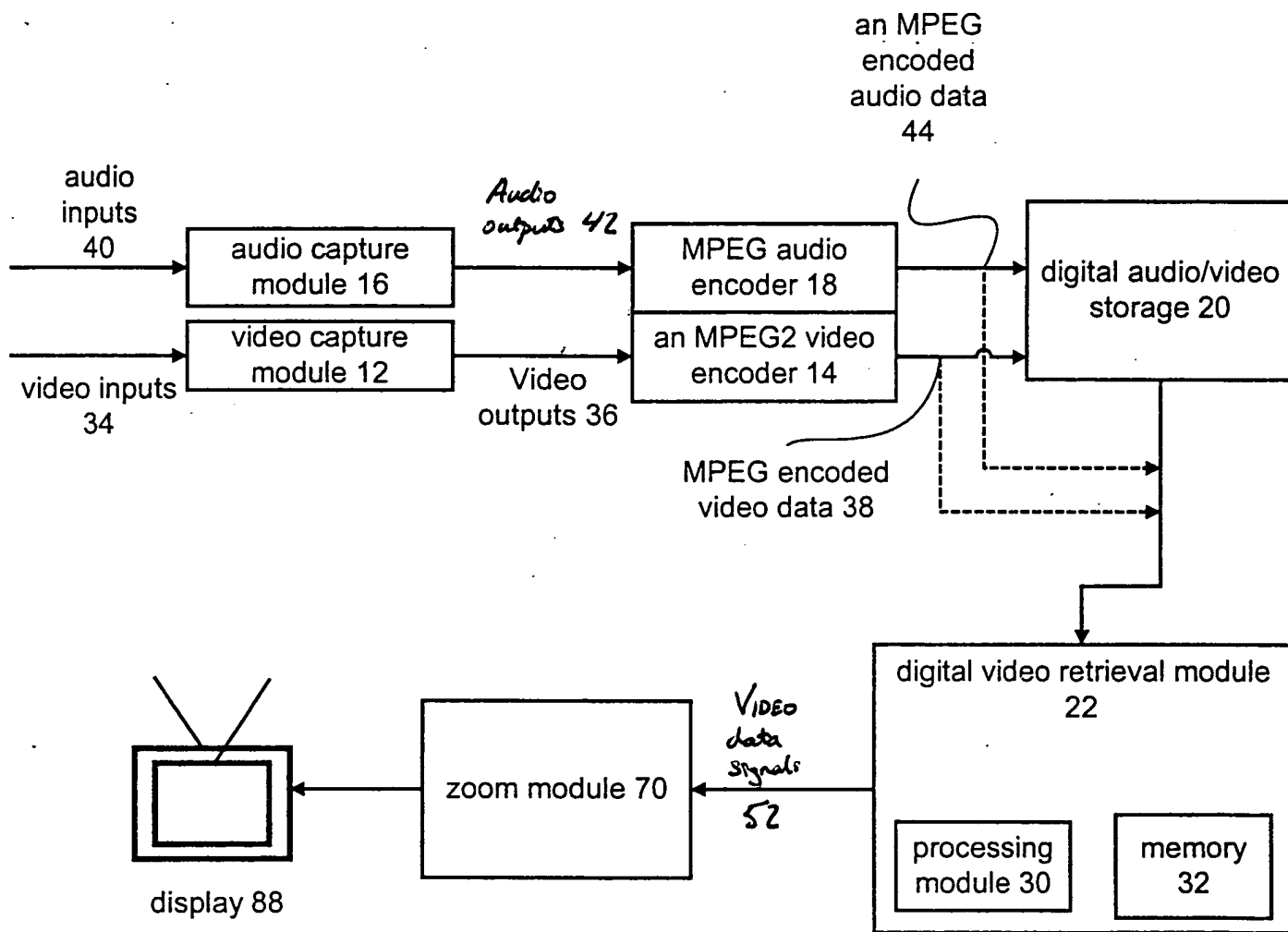


FIG. 1

Digital Video Recorder 10

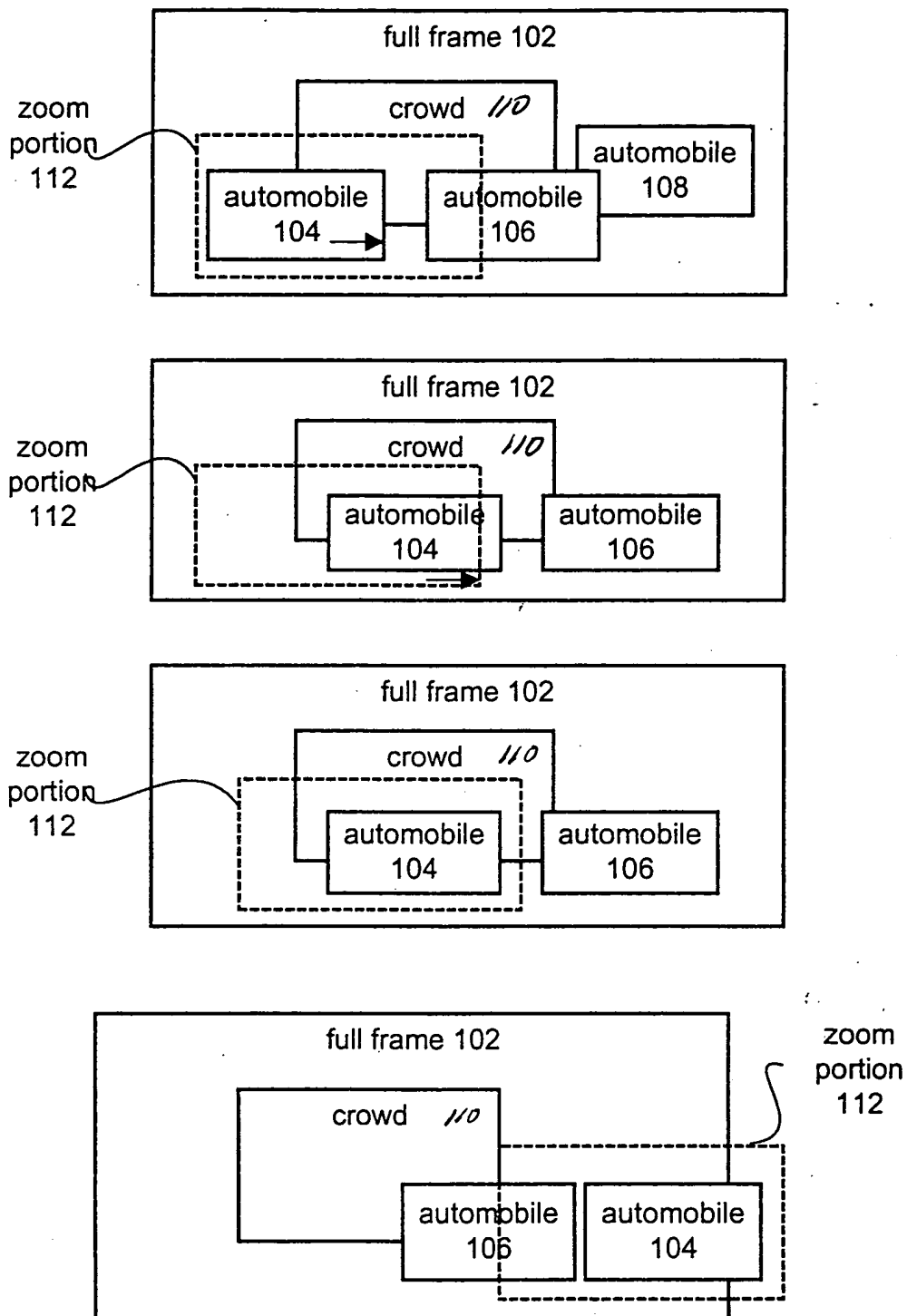


FIG. 2